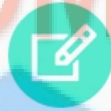
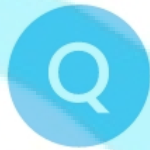


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## QUIZZES

Practice test 1 Unit 9



10 Questions



7 min

### Topics

Electromagnetic induction, Faraday's Law,  
Application in seismometer, Motional emf

Start Quiz

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

06 : 58



1/10



7 min



Hint

Q : Lenz's law is a consequence of the law of conservation of



energy



charge



momentum



none of these

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

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7

06 : 56



2/10



7 min



Hint

Q : A copper rod of length  $l$  is rotated about the end perpendicular to the uniform magnetic field  $B$  with constant angular velocity  $\omega$ . The induced emf between its two ends is



zero



$B\omega l^2$



$\frac{1}{2}B\omega l^2$



$\frac{1}{4}B\omega l^2$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

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7

06 : 54



3/10



7 min



Hint

Q : The cause of induced emf is

A

rate of change of flux

B

increase in flux

C

decrease in flux

D

change in flux

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

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7



06 : 52



4/10



7 min



Hint

Q : Alternating emf is produced by rotating a rectangular coil of wire in

A

magnetic field

B

electric field

C

conservative field

D

gravitational field

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 50



5/10



7 min



Hint

Q : The magnitude of motional emf is given by

A

$$\varepsilon = -vBL \sin\theta$$

B

$$\varepsilon = -vBL \cos\theta$$

C

$$\varepsilon = vBL \tan\theta$$

D

$$\varepsilon = vBL \sin\theta$$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

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06 : 47



6/10



7 min



Hint

Q : The motional emf depends upon

A

strength of magnet

B

length of conductor

C

speed of conductor

D

all of these

**SAEED MDCAT**

**SAEED MDCAT TEAM**



**SAEEDMDCAT**

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06 : 44



7/10



7 min



Hint

Q : The motional emf induced in a rod moving perpendicular to a magnetic field is given by

A

$$\varepsilon = -vBL$$

B

$$\varepsilon = 0$$

C

$$\varepsilon = vBL$$

D

$$\varepsilon = -1$$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

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06 : 41



8/10



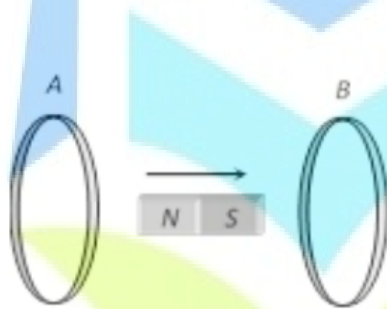
7 min



Hint

Q :

In the diagram shown if a bar magnet is moved along the common axis of two single turn coils A and B in the direction of arrow



A

Current is induced only in A &amp; not in B

B

Induced currents in A &amp; B are in the same direction

C

Current is induced only in B and not in A

D

Induced currents in A &amp; B are in opposite directions

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SAEEDMDCAT

06 : 38



9/10



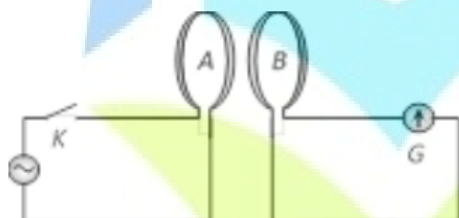
7 min



Hint

Q :

The diagram below shows two coils A and B placed parallel to each other at a very small distance. Coil A is connected to an ac supply. G is a very sensitive galvanometer. When the key is closed



A

Constant deflection will be observed in the galvanometer for 50 Hz supply

B

Visible small variations will be observed in the galvanometer for 50 Hz input

C

Oscillations in the galvanometer may be observed when the input ac voltage has a frequency of 1 to 2 Hz

D

No variation will be observed in the galvanometer even when the input ac voltage is 1 or 2 Hz

4

5

6

7

8

9

10

06 : 36



10/10



7 min



Hint

Q :

The laws of electromagnetic induction have been used in the construction of a

A

galvanometer

B

voltmeter

C

electric motor

D

generator

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

5

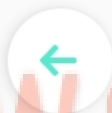
6

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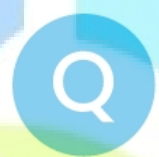
9

10



## QUIZ RESULT

Practice test 1 Unit 9



10



7 min



03-May-2021



0 sec



0/10



0.0%

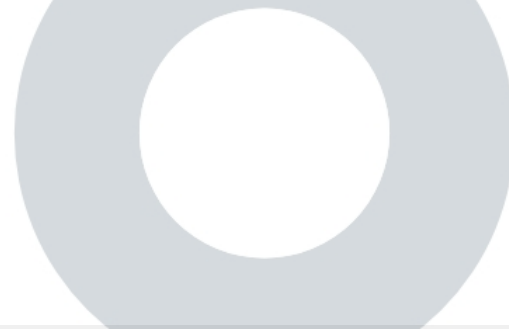
SAEED MDCAT

Result Detail

SAEED MDCAT TEAM



SAEEDMDCAT







## Practice test 1 Unit 9



Correct



Unattempted



Incorrect



1/10

Q : Lenz's law is a consequence of the law of conservation of



energy



charge



momentum



none of these

Explanation

SAEED MDCAT TEAM

Basic concept



SAEEDMDCAT

1

2

3

4

5

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7



## Practice test 1 Unit 9



Correct



Unattempted



Incorrect



2/10

Q : A copper rod of length  $\ell$  is rotated about the end perpendicular to the uniform magnetic field  $B$  with constant angular velocity  $\omega$ . The induced emf between its two ends is

A

zero

B

$B\omega\ell^2$

C

$\frac{1}{2}B\omega\ell^2$

D

$\frac{1}{4}B\omega\ell^2$

Explanation



SAEEDMDCAT

$$\text{Average emf} = \frac{0 + Bv\ell}{2} = \frac{1}{2}Bv\ell = \frac{1}{2}B(\ell\omega)$$



## Practice test 1 Unit 9



Correct



Unattempted



Incorrect



3/10

Q : The cause of induced emf is

A

rate of change of flux

B

increase in flux

C

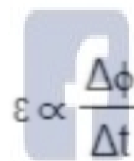
decrease in flux

D

change in flux

Explanation

$$\varepsilon = -N \frac{\Delta\phi}{\Delta t}$$



$$\varepsilon \propto \frac{\Delta\phi}{\Delta t}$$

SAEEDMDCAT



## Practice test 1 Unit 9



Correct



Unattempted



Incorrect



4/10

Q : Alternating emf is produced by rotating a rectangular coil of wire in



magnetic field



electric field



conservative field



gravitational field

Explanation

SAEED MDCAT TEAM

$$\varepsilon = vBL \sin\theta$$



SAEEDMDCAT

1

2

3

4

5

6

7



## Practice test 1 Unit 9



Correct



Unattempted



Incorrect



5/10

Q : The magnitude of motional emf is given by

A

$$\varepsilon = -vBL \sin\theta$$

B

$$\varepsilon = -vBL \cos\theta$$

C

$$\varepsilon = vBL \tan\theta$$

D

$$\varepsilon = vBL \sin\theta$$

Explanation

$$\varepsilon = vBL \sin\theta$$



SAEEDMDCAT

1

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6

7



Practice test 1 Unit 9



Correct



Unattempted



Incorrect



6/10

Q : The motional emf depends upon

A

strength of magnet

B

length of conductor

C

speed of conductor

D

all of these

Explanation

$$\epsilon = vBL \sin \theta$$



SAEEDMDCAT

1

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7



## Practice test 1 Unit 9



Correct



Unattempted



Incorrect



7/10

Q : The motional emf induced in a rod moving perpendicular to a magnetic field is given by



$$\varepsilon = -vBL$$



$$\varepsilon = 0$$



$$\varepsilon = vBL$$



$$\varepsilon = -1$$

Explanation

SAEED MDCAT TEAM

Formula



SAEEDMDCAT

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Correct



Unattempted



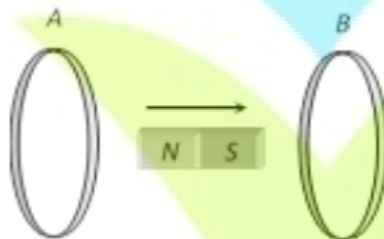
Incorrect



8/10

Q :

In the diagram shown if a bar magnet is moved along the common axis of two single turn coils A and B in the direction of arrow



A

Current is induced only in A &amp; not in B

B

Induced currents in A &amp; B are in the same direction

C

Current is induced only in B and not in A

D

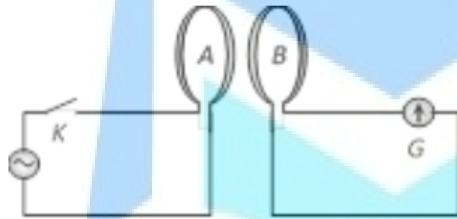
Induced currents in A &amp; B are in opposite directions





Q:

The diagram below shows two coils A and B placed parallel to each other at a very small distance. Coil A is connected to an ac supply. G is a very sensitive galvanometer. When the key is closed



A

Constant deflection will be observed in the galvanometer for 50 Hz supply

B

Visible small variations will be observed in the galvanometer for 50 Hz input

C

Oscillations in the galvanometer may be observed when the input ac voltage has a frequency of 1 to 2 Hz

D

No variation will be observed in the galvanometer even when the input ac voltage is 1 or 2 Hz

Explanation



SAEEDMDCAT

At low frequency of 1 to 2 Hz, oscillations may be observed as our eyes will be able to detect it.



## Practice test 1 Unit 9



Correct



Unattempted



Incorrect



10/10

Q :

The laws of electromagnetic induction have been used in the construction of a

A

galvanometer

B

voltmeter

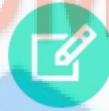
C

electric motor

D

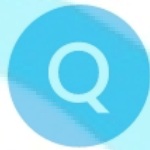
generator

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## QUIZZES

Practice test 2 Unit 9



10 Questions



7 min

### Topics

Lenz's Law, Mutual induction (Mutually Induced EMF ), Self-induction

Start Quiz

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

06 : 58



1/10



7 min



Hint

Q : The phenomenon in which a changing current in a coil induces an e.m.f in itself is called.

A

Mutual inductance

B

Mutual induction

C

Self inductance

D

Self induction

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

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06 : 56



2/10

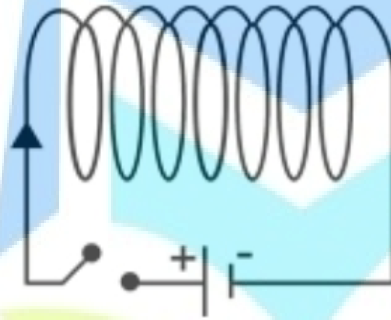


7 min



Hint

Q : A solenoid is shown in the figure such that switch is closed and then opened. An emf is induced during.



A

current was decreasing

B

current was increasing

C

current was changing

D

current was constant.



SAEEDMDCAT

1

2

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7

06 : 54



3/10



7 min



Hint

Q : The unit of ratio of self inductance to the mutual inductance is

A

Henry

B

tesla

C

VsA

D

no unit

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

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06 : 48



4/10



7 min



Hint

Q :

The current flowing in two coaxial coils in the same direction. On increasing the distance between the two, the electric current will

A

Increase

B

Decrease

C

Remain unchanged

D

The information is incomplete

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

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7

06 : 45



5/10



7 min



Hint

Q :

A magnet is brought towards a coil (i) speedily (ii) slowly then the induced e.m.f./induced charge will be respectively

A

More in first case / More in first case

B

More in first case/Equal in both case

C

Less in first case/More in second case

D

Less in first case/Equal in both case

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7



06 : 43



6/10



7 min



Hint

Q :

metallic ring connected to a rod oscillates freely like a pendulum. If now a magnetic field is applied in horizontal direction so that the pendulum now swings through the field, the pendulum will

A

Keep oscillating with the old time period

B

Keep oscillating with a smaller time period

C

Keep oscillating with a larger time period

D

Come to rest very soon

1

2

3

4

5

6

7

06 : 41



7/10



7 min



Hint

Q :

If a coil of metal wire is kept stationary in a non-uniform magnetic field, then

A

An e.m.f. is induced in the coil

B

A current is induced in the coil

C

Neither e.m.f. nor current is induced

D

Both e.m.f. and current is induced

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

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7

06 : 36



8/10



7 min



Hint

Q :

When a bar magnet falls through a long hollow metal cylinder fixed with its axis vertical, the final acceleration of the magnet is

A

Equal to zero

B

Less than  $g$

C

Equal to  $g$

D

Equal to  $g$  in to **beginning** and then more than  $g$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

5

6

7

8

9

10

06 : 33



9/10



7 min



Hint

Q :

Choke coil works on the principle of

A

transient current

B

self-induction

C

mutual induction

D

watt less current

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

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6

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8

9

10

06 : 31



10/10



7 min



Hint

Q :

Whenever, current is changed in a coil, an induced e.m.f. is produced in the same coil. This property of the coil is due to

A

mutual induction

B

self-induction

C

eddy currents

D

hysteresis

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

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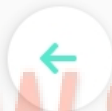
6

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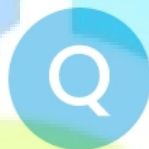
9

10



## QUIZ RESULT

Practice test 2 Unit 9



10



7 min



03-May-2021



0 sec



0/10



0.0%

SAEED MDCAT

Result Detail

SAEED MDCAT TEAM



SAEEDMDCAT





## Practice test 2 Unit 9



Correct



Unattempted



Incorrect



1/10

Q : The phenomenon in which a changing current in a coil induces an e.m.f in itself is called.

A

Mutual inductance

B

Mutual induction

C

Self inductance

D

Self induction

# SAEED MDCAT

## SAEED MDCAT TEAM



## SAEEDMDCAT

1

2

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## Practice test 2 Unit 9



Correct



Unattempted

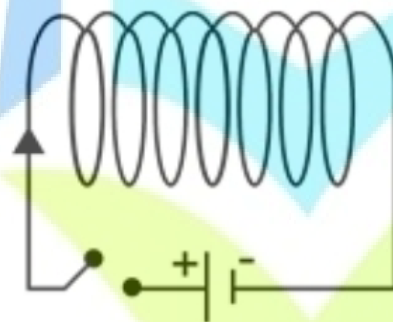


Incorrect



2/10

Q : A solenoid is shown in the figure such that switch is closed and then opened. An emf is induced during.



A

current was decreasing

B

current was increasing

C

current was changing

D

current was constant.





## Practice test 2 Unit 9



Correct



Unattempted



Incorrect



3/10

Q : The unit of ratio of self inductance to the mutual inductance is

A

Henry

B

tesla

C

VsA

D

no unit

# SAEED MDCAT

## SAEED MDCAT TEAM



## SAEEDMDCAT

1

2

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4

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6

7



## Practice test 2 Unit 9



Correct



Unattempted



Incorrect



4/10

Q :

The current flowing in two coaxial coils in the same direction. On increasing the distance between the two, the electric current will

A

Increase

B

Decrease

C

Remain unchanged

D

The information is incomplete

Explanation

Induced current in both the coils assist the main current so current through each coil increases.



1

2

3

4

5

6

7



Incorrect



4/10

Q:

The current flowing in two coaxial coils in the same direction. On increasing the distance between the two, the electric current will

A

Increase

B

Decrease

C

Remain unchanged

D

The information is incomplete

Explanation

Induced current in both the coils assist the main current so current through each coil increases.





## Practice test 2 Unit 9



Correct



Unattempted



Incorrect



5/10

Q :

A magnet is brought towards a coil (i) speedily (ii) slowly then the induced e.m.f./induced charge will be respectively

A

More in first case / More in first case

B

More in first case/Equal in both case

C

Less in first case/More in second case

D

Less in first case/Equal in both case

Explanation

The magnitude of induced e.m.f. is directly proportional to the rate of change of magnetic flux. Induced charge doesn't depend upon time.

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## Practice test 2 Unit 9



Correct



Unattempted



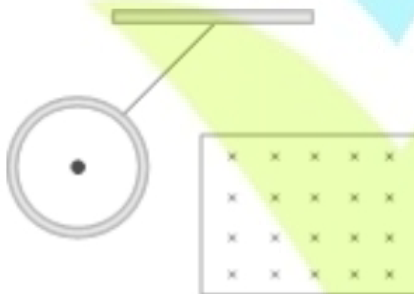
Incorrect



6/10

Q :

metallic ring connected to a rod oscillates freely like a pendulum. If now a magnetic field is applied in horizontal direction so that the pendulum now swings through the field, the pendulum will



A

Keep oscillating with the old time period

B

Keep oscillating with a smaller time period

C

Keep oscillating with a larger time period

D

Come to rest very soon

1

2

3

4

5

6

7



## Practice test 2 Unit 9



Correct



Unattempted



Incorrect



7/10

Q :

If a coil of metal wire is kept stationary in a non-uniform magnetic field, then

A

An e.m.f. is induced in the coil

B

A current is induced in the coil

C

Neither e.m.f. nor current is induced

D

Both e.m.f. and current is induced

Explanation

E.m.f. or current induces, only when flux linked with the coil changes.

1

2

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## Practice test 2 Unit 9



Correct



Unattempted



Incorrect



8/10

Q :

When a bar magnet falls through a long hollow metal cylinder fixed with its axis vertical, the final acceleration of the magnet is

A

Equal to zero

B

Less than  $g$

C

Equal to  $g$

D

Equal to  $g$  in to beginning and then more than  $g$



## Practice test 2 Unit 9



Correct



Unattempted



Incorrect



9/10

Q:

Choke coil works on the principle of

A

transient current

B

self-induction

C

mutual induction

D

watt less current

4

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SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT





## Practice test 2 Unit 9



Correct



Unattempted



Incorrect



10/10

Q :

Whenever, current is changed in a coil, an induced e.m.f. is produced in the same coil. This property of the coil is due to

A

mutual induction

B

self-induction

C

eddy currents

D

hysteresis

4

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6

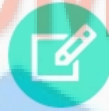
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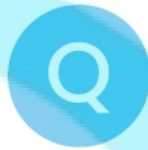
10

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## QUIZZES

Practice test 3 Unit 9



10 Questions



7 min

Topics

Alternating Current Generator

Start Quiz

# SAEED MDCAT

## SAEED MDCAT TEAM



## SAEEDMDCAT

06 : 59



1/10



7 min



Hint

Q : A coil having number of turns  $N$  and cross-sectional area  $A$  is rotated in a uniform magnetic field  $B$  with an angular velocity  $\omega$ . The maximum value of the emf induced in it is

A

$$\frac{NBA}{\omega}$$

B

$$\frac{NBA}{\omega^2}$$

C

$$NBA\omega$$

D

$$NBA\omega^2$$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

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7

06 : 54



2/10



7 min



Hint

Q : The stator consist of group of \_\_\_\_\_



coils



bar magnets



electromagnets



rings

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

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7

06 : 51



3/10



7 min



Hint

Q : A sinusoidal current is represented by the equation  $I = I_0 \sin(\theta t)$ . Which equation represents the sinusoidal current with both its frequency and amplitude doubled?



$$2I = I_0 \sin(2\theta t)$$



$$I = I_0 \sin(2\theta t)$$



$$I = 2I_0 \sin(2\theta t)$$



$$I = I_0 \sin\left(\frac{1}{2}\theta t\right)$$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

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3

4

5

6

7

06 : 49



4/10



7 min



Hint

Q : When the motor is loaded then

A

speed of motor decrease

B

back emf decrease

C

flow of current increase

D

all of above

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

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3

4

5

6

7

06 : 47



5/10



7 min



Hint

Q : A generator produces 100V when rotated at certain speed. If its speed of rotation is doubled what will be the output voltage,



100V



200V



50V



none of these

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

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6

7

06 : 45



6/10



7 min



Hint

Q : A rectangular coil  $0.20 \text{ m} \times 0.10 \text{ m}$ , of 100 turns, rotates in a magnetic field of  $3 \times 10^{-3} \text{ T}$  with a frequency of 20 Hz, about an axis normal to the magnetic field. What is the maximum value of induced emf?



0.12  $\pi \text{ V}$



0.18  $\pi \text{ V}$



0.24  $\pi \text{ V}$



0.30  $\pi \text{ V}$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7



06 : 42



7/10



7 min



Hint

Q : Faraday's generator with which he was able to produce a continuous induced current called

A

tri polar generator

B

multipolar generator

C

dipolar generator

D

homopolar generator

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

5

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9

10

06 : 40



8/10



7 min



Hint

Q :

The armature is rotated by a

A

turbine by a water fall

B

fuel engine

C

both a and b

D

none of these

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

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10

06 : 38



9/10



7 min



Hint

Q : A dynamo converts



electrical energy into mechanical energy



mechanical energy into electrical energy



magnetic energy into electrical energy



heat energy into electrical energy

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

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10

06 : 36



10/10



7 min



Hint

Q : An A.C is measured with the help of

A

heating effect

B

magnetic effect

C

chemical effect

D

both a and b

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

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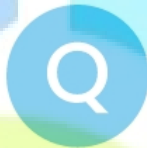
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10



## QUIZ RESULT

Practice test 3 Unit 9



10



7 min



03-May-2021



0 sec



0/10



0.0%

SAEED MDCAT

Result Detail

SAEED MDCAT TEAM



SAEEDMDCAT





### Practice test 3 Unit 9



Correct



Unattempted



Incorrect



1/10

Q : A coil having number of turns  $N$  and cross-sectional area  $A$  is rotated in a uniform magnetic field  $B$  with an angular velocity  $\omega$ . The maximum value of the emf induced in it is



$$\frac{NBA}{\omega}$$



$$\frac{NBA}{\omega^2}$$



$$NBA\omega$$



$$NBA\omega^2$$

Explanation



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$$\text{emf} = NwAB\sin\theta, \theta = 90^\circ$$

1

2

3

4

5

6

7



## Practice test 3 Unit 9



Correct



Unattempted



Incorrect



2/10

Q : The stator consist of group of \_\_\_\_\_

A

coils

B

bar magnets

C

electromagnets

D

rings

Explanation

Book line



SAEEDMDCAT

1

2

3

4

5

6

7



Incorrect



3/10

Q : A sinusoidal current is represented by the equation  $I = I_0 \sin(\theta t)$ . Which equation represents the sinusoidal current with both its frequency and amplitude doubled?

A

$$2I = I_0 \sin(2\theta t)$$

B

$$I = I_0 \sin(2\theta t)$$

C

$$I = 2I_0 \sin(2\theta t)$$

D

$$I = I_0 \sin\left(\frac{1}{2}\theta t\right)$$

Explanation

SAEED MDCAT TEAM

Now,  $I = I \sin(\theta t) = I_0 \sin(2\pi f t)$  where  $f$  is the frequency.

Since  $f$  and  $I_0$  are both doubled, the corresponding sinusoidal current is thus

$$\begin{aligned} I &= (2I_0) \sin[2\pi(2f)t] = 2I_0 \sin[2(2\pi f)t] \\ &= 2I_0 \sin(2\theta t) \end{aligned}$$





## Practice test 3 Unit 9



Correct



Unattempted



Incorrect



4/10

Q : When the motor is loaded then

A

speed of motor decrease

B

back emf decrease

C

flow of current increase

D

all of above

Explanation

Basic concept



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1

2

3

4

5

6

7



Q : A generator produces 100V when rotated at certain speed. If its speed of rotation is doubled what will be the output voltage,

A 100V

B 200V

C 50V

D none of these

Explanation

As,

$$\varepsilon = N\omega AB \sin\theta$$

$$\Rightarrow \varepsilon \propto \omega$$

$$\Rightarrow \frac{\varepsilon_1}{\varepsilon_2} = \frac{\omega_1}{\omega_2}$$

$$\Rightarrow \frac{100}{\varepsilon_2} = \frac{\omega}{2\omega} = \frac{1}{2}$$

$$\Rightarrow \varepsilon_2 = 200 \text{ V}$$



### Practice test 3 Unit 9



Correct



Unattempted



Incorrect



6/10

Q : A rectangular coil  $0.20 \text{ m} \times 0.10 \text{ m}$ , of 100 turns, rotates in a magnetic field of  $3 \times 10^{-3} \text{ T}$  with a frequency of 20 Hz, about an axis normal to the magnetic field. What is the maximum value of induced emf?



0.12  $\pi \text{ V}$



0.18  $\pi \text{ V}$



0.24  $\pi \text{ V}$



0.30  $\pi \text{ V}$

Explanation

$$E_0 = NBA\omega$$

$$\begin{aligned} E_0 &= 100 \times 3 \times 10^{-3} \times 0.20 \times 0.10 \times 2\pi \times 20 \\ &= 0.24 \pi \text{ volt} \end{aligned}$$



### Practice test 3 Unit 9



Correct



Unattempted



Incorrect



7/10

Q : Faraday's generator with which he was able to produce a continuous induced current called

A

tri polar generator

B

multipolar generator

C

dipolar generator

D

homopolar generator

Explanation

Faraday's homopolar disc generator by which was able to produce a continuous induced current.

1

2

3

4

5

6

7



## Practice test 3 Unit 9



Correct



Unattempted



Incorrect



8/10

Q:

The armature is rotated by a

A

turbine by a water fall

B

fuel engine

C

both a and b

D

none of these

Explanation

Armature is rotated by fuel engine or by a water fall.

4

5

6

7

8

9

10



## Practice test 3 Unit 9



Correct



Unattempted



Incorrect



9/10

Q : A dynamo converts



electrical energy into mechanical energy



mechanical energy into electrical energy



magnetic energy into electrical energy



heat energy into electrical energy

Explanation

Dynamo convert

M.E  $\rightarrow$  E.E



SAEEDMDCAT

4

5

6

7

8

9

10



## Practice test 3 Unit 9



Correct



Unattempted



Incorrect



10/10

Q : An A.C is measured with the help of

A

heating effect

B

magnetic effect

C

chemical effect

D

both a and b

Explanation

All A.C meters use magnetic effect for detection of current.



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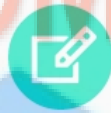
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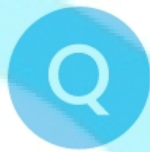
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## QUIZZES

Practice test 4 Unit 9



10 Questions



7 min

Topics  
Transformers

Start Quiz

# SAEED MDCAT

## SAEED MDCAT TEAM



## SAEEDMDCAT



06 : 58



1/10



7 min



Hint

Q : If the current in the primary coil and number of turns in it are  $I_p$  and  $N_p$  respectively and the number of turns and current in the secondary are  $N_s$  and  $I_s$  respectively then the value the of  $N_s:N_p$



$I_s : I_p$



$I_p : I_s$



$I_s^2 : I_p^2$



$I_p^2 : I_s^2$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 56



2/10



7 min



Hint

Q : The device in which induced e.m.f is statically induced e.m.f is

A

Transformer

B

Generator

C

Alternator

D

Dynamic

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 55



3/10



7 min



Hint

Q : Step up transformer has transformation ratio of 3 :2 what is voltage in secondary if voltage in primary is 30 V?



45V



15V



90V



300V

**SAEED MDCAT**

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 53



4/10



7 min



Hint

Q : Which of the following quantity remain same in the transformer

A

Current

B

Frequency

C

Voltage

D

All of these

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 51



5/10



7 min



Hint

Q : Power loss in actual transformer is due to\_\_\_\_\_

A

small output

B

eddy currents and magnetic hysteresis

C

soft iron core

D

back emf

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 34



6/10



7 min



Hint

Q : The out put voltage of a transformer is 3 times the input voltage then turns ratio will be\_\_\_\_\_

A

 $1/3$ 

B

3

C

1

D

6

# SAEED MDCAT

## SAEED MDCAT TEAM



## SAEEDMDCAT

1

2

3

4

5

6

7

06 : 32



7/10



7 min



Hint

Q : In a transformer 220 ac voltage is increased to 2200 volts. If the number of turns in the secondary are 2000, then the number of turns in the primary will be.



100



150



200



20

SAEED MDCAT

SAEED MDCAT TEAM



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1

2

3

4

5

6

7

06 : 28



8/10



7 min



Hint

Q : If the current in the primary coil and number of turns in it are  $I_p$  and  $N_p$  respectively and the number of turns and current in the secondary are  $N_s$  and  $I_s$  respectively then the value the of  $N_s:N_p$



$I_s : I_p$



$I_p : I_s$



$I_s^2 : I_p^2$



$I_p^2 : I_s^2$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

5

6

7

8

9

10



06 : 26



9/10



7 min



Hint

Q : If electron is moving from A to B in wire Ab, then current induced in the coil is

A

anticlockwise

B

clockwise

C

no current will be induced

D

arbitrary direction

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SAEED MDCAT TEAM



SAEEDMDCAT

4

5

6

7

8

9

10

06 : 25



10/10



7 min



Hint

Q :

The core of a transformer is laminated because



the weight of the transformer may be reduced



rusting of the core may be prevented



ratio of voltage in primary and secondary may be increased



energy losses due to eddy currents may be minimized

# SAEED MDCAT

## SAEED MDCAT TEAM



## SAEEDMDCAT

4

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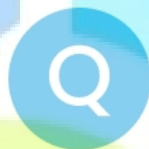
9

10



## QUIZ RESULT

Practice test 4 Unit 9



10



7 min



03-May-2021



0 sec



0/10



0.0%

SAEED MDCAT

Result Detail

SAEED MDCAT TEAM



SAEEDMDCAT





## Practice test 4 Unit 9

Correct

Unattempted



Incorrect



1/10

Q : If the current in the primary coil and number of turns in it are  $I_P$  and  $N_P$  respectively and the number of turns and current in the secondary are  $N_S$  and  $I_S$  respectively then the value the of  $N_S:N_P$

A

$I_S : I_P$

B

$I_P : I_S$

C

$I_S^2 : I_P^2$

D

$I_P^2 : I_S^2$

Explanation

$$\frac{I_P}{I_S} = \frac{V_S}{V_P} \dots\dots\dots (2)$$

Equation equation (1) and (2)

$$\frac{N_S}{N_P} = \frac{I_P}{I_S}$$

1

2

3

4

5

6

7



## Practice test 4 Unit 9



Correct



Unattempted



Incorrect



2/10

Q : The device in which induced e.m.f is statically induced e.m.f is



Transformer



Generator



Alternator



Dynamic

Explanation

In transformer, both primary and secondary coil at rest. So induced emf is produced statically.



SAEEDMDCAT

1

2

3

4

5

6

7



Incorrect



3/10

Q : Step up transformer has transformation ratio of 3 :2 what is voltage in secondary if voltage in primary is 30 V?

A

45V

B

15V

C

90V

D

300V

Explanation

As,

$$\frac{N_s}{N_p} = \frac{V_s}{V_p}$$
$$\frac{3}{2} = \frac{V_s}{30}$$

$$\Rightarrow V_s = 45V$$



## Practice test 4 Unit 9



Correct



Unattempted



Incorrect



4/10

Q : Which of the following quantity remain same in the transformer

A

Current

B

Frequency

C

Voltage

D

All of these

Explanation

SAEED MDCAT TEAM

Information



SAEEDMDCAT

1

2

3

4

5

6

7



Correct



Unattempted



Incorrect



5/10

Q : Power loss in actual transformer is due to\_\_\_\_\_

A

small output

B

eddy currents and magnetic hysteresis

C

soft iron core

D

back emf

Explanation

Two main causes of power loss in transformer

Eddy current

Hysteresis loss





Practice test 4 Unit 9



Correct



Unattempted



Incorrect



6/10

Q : The out put voltage of a transformer is 3 times the input voltage then turns ratio will be\_\_\_\_\_

A

1/3

B

3

C

1

D

6

Explanation

$$V_S = 3V_P$$

$$\frac{V_S}{V_P} = \frac{3}{1}$$

$$\frac{N_S}{N_P} = \frac{V_S}{V_P} = \frac{3}{1}$$

1

2

3

4

5

6

7



## Practice test 4 Unit 9



Correct



Unattempted



Incorrect



7/10

Q : In a transformer 220 ac voltage is increased to 2200 volts. If the number of turns in the secondary are 2000, then the number of turns in the primary will be.

A

100

B

150

C

200

D

20

Explanation

$$\frac{V_p}{V_s} = \frac{N_p}{N_s} \rightarrow N_p = \left( \frac{220}{2200} \right) 2000 = 200$$

1

2

3

4

5

6

7



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Q : If the current in the primary coil and number of turns in it are  $I_p$  and  $N_p$  respectively and the number of turns and current in the secondary are  $N_s$  and  $I_s$  respectively then the value the of  $N_s:N_p$

A

$I_s : I_p$

B

$I_p : I_s$

C

$I_s^2 : I_p^2$

D

$I_p^2 : I_s^2$

Explanation

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$$\frac{N_s}{N_p} = \frac{V_s}{V_p}$$

SAEED MDCAT TEAM

As we know that

$$P_p = P_s; V_p I_p = V_s I_s$$

$$\frac{I_p}{I_s} = \frac{V_s}{V_p}$$

$$\text{So, } \frac{N_s}{N_p} = \frac{I_p}{I_s}$$



## Practice test 4 Unit 9



Correct



Unattempted



Incorrect



9/10

Q : If electron is moving from A to B in wire Ab, then current induced in the coil is

A

anticlockwise

B

clockwise

C

no current will be induced

D

arbitrary direction

Explanation

SAEED MDCAT TEAM

current will be induced if change in flux take place



SAEEDMDCAT

4

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Correct



Unattempted



Incorrect



10/10

Q:

The core of a transformer is laminated because

A

the weight of the transformer may be reduced

B

rusting of the core may be prevented

C

ratio of voltage in primary and secondary may be increased

D

energy losses due to eddy currents may be minimized

Explanation

When there is change of flux in the core of a transformer due to change in current round it, eddy current is produced. The direction of this current is opposite to the current which produces it, so it will reduce the main current. We laminate the core so that flux is reduced resulting in the reduced production of eddy current.